

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 – 36: Canceled

37. (Currently Amended) A coating method for selectively applying a coating to surfaces of a stent, the method applying the coating based upon optical properties of the surfaces such that the coating is applied to surfaces of the stent and is not applied to surfaces of a ~~balloon portion of a catheter~~ structure on which the stent is mounted, the surfaces of the stent being optically distinguishable from the surfaces of the ~~balloon portion of the catheter~~ structure, the coating method comprising:

(a) generating relative movement between the stent and at least one optical scanning device and at least one coating applicator;

(b) optically scanning at least a portion of the stent by use of said at least one optical scanning device so as to produce output indicative of the different types of surfaces of the stent and ~~balloon portion of the catheter~~ structure; and

(c) responding to said output by selectively activating said coating applicator, thereby applying the coating substantially only to surfaces of the stent.

38. (Currently Amended) The coating method of claim 37, wherein said relative movement includes rotating the ~~object~~ stent about an axis perpendicular to a direction of application of said coating applicator.

39. (Currently Amended) The coating method of claim 37, further comprising simultaneously supporting the ~~object~~ stent at two different regions along a length of the ~~object~~ stent.

40. (Original) The coating method of claim 37, wherein said selective activation includes selectively activating a pressure-pulse actuated drop-ejection system with at least one nozzle.

41. (Original) The coating method of claim 37, wherein said selective activation includes selectively activating a pressure-pulse actuated drop-ejection system with at least one nozzle that is included in a removable sub-housing, said removable sub-housing further including a fluid delivery system in fluid communication so as to supply coating material to said coating applicator.

42. (Previously Presented) The coating method of claim 37, wherein said applying is performed by selectively activating one of a plurality of coating applicators, wherein said at least one coating applicator implemented as said plurality of coating applicators, each of said plurality of coating applicators applying a different coating.

43. (Previously Presented) The coating method of claim 42, wherein said applying is performed by selectively activating, in sequence, said plurality of coating applicators, thereby applying a plurality of layered coats, each one of said plurality of layered coats being of a coating material that is different from adjacent layered coats.

44. Canceled

45. (Currently Amended) The coating method of claim 37, wherein responding to said output includes said output being indicative only of a surface of the first type thereby applying the coating to substantially the entire surface of the ~~object~~ stent.

46. (Currently Amended) The coating method of claim 37, further comprising varying a spatial relationship between said coating applicator and the ~~object~~ stent.

47. (Original) The coating method of claim 46, wherein said varying is along two axes, a first axis that is parallel to a direction of application of said coating

applicator, and a second axis that is perpendicular to said direction of application of said coating applicator.

48. (Original) The coating method of claim 47, wherein said varying is accomplished by displacing said coating applicator.

49. (Currently Amended) The coating method of claim 48, wherein said varying is accomplished by varying the spatial relationship between said ~~object~~ stent and a displaceable applicator base upon which said at least one coating applicator and said at least one optical scanning device are deployed.

50. (Original) The coating method of claim 49, wherein controlling said varying is accomplished by said processing unit.

51. (Original) The coating method of claim 37, further comprising responding to an indication of said relative motion so as to change operational parameters of the coating device as required.

52. (Currently Amended) The coating method of claim 37, wherein said generating relative movement, said optically scanning at least a portion of the ~~object~~ stent, and said selectively activating said coating are performed within a housing.

53. (New) A coating method for selectively applying a coating to surfaces of a stent, the method applying the coating based upon optical properties of the surfaces such that the coating is applied to surfaces of the stent and is not applied to surfaces of a balloon portion of a catheter on which the stent is mounted, the surfaces of the stent being optically distinguishable from the surfaces of the balloon portion of the catheter, the coating method comprising:

(a) generating relative movement between the stent and at least one optical scanning device and at least one coating applicator;

(b) optically scanning at least a portion of the stent by use of said at least one optical scanning device so as to produce output indicative of the different types of surfaces of the stent and balloon portion of the catheter with which the at least one coating applicator is aligned; and

(c) responding to said output by selectively activating said coating applicator when the produced output indicates that the at least one coating applicator is aligned only with a surface of the stent,

thereby applying the coating substantially only to surfaces of the stent.

54. (New) A method of applying a coating to a surface of a stent, wherein the stent is mounted on a stent support structure to provide a mounted stent assembly, wherein the stent support structure comprises a surface that is optically distinguishable from the stent surface, the method comprising:

positioning at least one coating applicator such that a direction of application is generally directed toward the mounted stent assembly;

determining whether or not the coating applicator is aligned with only the surface of the stent; and

activating the at least one coating applicator when it is determined that the coating applicator is aligned with only the surface of the stent.

55. (New) The method of claim 54, wherein determining whether or not the coating applicator is aligned with only the surface of the stent comprises:

optically scanning the mounted stent assembly; and

producing an output indicating at least one of: whether the at least one coating applicator is aligned with only the surface of the stent or whether the at least one coating applicator is aligned with only the surface of the stent support structure.

56. (New) The method of claim 54, wherein the stent support structure comprises:

a balloon portion of a catheter.

57. (New) The method of claim 54, further comprising:
de-activating the at least one coating applicator when it is determined that the coating applicator is not aligned with only the surface of the stent.

58. (New) The method of claim 54, further comprising:
varying a spatial relationship between the at least one coating applicator and the mounted stent assembly.

59. (New) The method of claim 58, wherein:
varying is along at least one of two axes:
a first axis that is substantially parallel to a direction of application of the at least one coating applicator, and
a second axis that is substantially perpendicular to the direction of application of the at least one coating applicator.

60. (New) The method of claim 55, further comprising:
generating relative movement between the mounted stent assembly, at least one optical scanning device and the at least one coating applicator.

61. (New) The method of claim 60, wherein generating relative movement comprises:
rotating the mounted stent assembly about an axis substantially perpendicular to a direction of application of the at least one coating applicator.

62. (New) The method of claim 60, wherein generating relative movement comprises:
rotating the mounted stent assembly about an axis at an angle relative to a direction of application of the at least one coating applicator.

63. (New) The method of claim 60, wherein generating relative movement comprises:

rotating the mounted stent assembly while at least one of: the at least one coating applicator and the at least one optical scanning device remains stationary.

64. (New) A method of applying a coating to a surface of a stent, wherein the stent is mounted on a stent support structure to provide a mounted stent assembly, wherein the stent support structure comprises a surface that is optically distinguishable from the stent surface, the method comprising:

generating relative movement between the mounted stent assembly and at least one optical scanning device and at least one coating applicator;

optically scanning at least a portion of the mounted stent assembly by use of said at least one optical scanning device so as to produce output indicative of the different types of surfaces of the mounted stent assembly with which the at least one coating applicator is aligned; and

activating said at least one coating applicator when the scanning output indicates that the at least one coating applicator is aligned only with the surface of the stent.

65. (New) The method of claim 64, wherein generating relative movement comprises:

rotating the mounted stent assembly about an axis substantially perpendicular to a direction of application of the at least one coating applicator.

66. (New) The method of claim 64, wherein generating relative movement comprises:

rotating the mounted stent assembly about an axis at an angle relative to a direction of application of the at least one coating applicator.

67. (New) The method of claim 64, wherein generating relative movement comprises:

rotating the mounted stent assembly while at least one of: the at least one coating applicator and the at least one optical scanning device remains stationary.

68. (New) The method of claim 64, wherein determining whether or not the coating applicator is aligned with only the surface of the stent comprises:

producing an output indicating at least one of: whether the at least one coating applicator is aligned with only the surface of the stent or whether the at least one coating applicator is aligned with only the surface of the stent support structure.

69. (New) The method of claim 64, further comprising:
de-activating the at least one coating applicator when the scanning output indicates that the coating applicator is not aligned with only the surface of the stent.

70. (New) The method of claim 64, wherein the stent support structure comprises:

a balloon portion of a catheter.

71. (New) The method of claim 64, further comprising:
varying a spatial relationship between the at least one coating applicator and the mounted stent assembly.

72. (New) The method of claim 71, wherein:

varying is along at least one of two axes:

a first axis that is substantially parallel to a direction of application of the at least one coating applicator, and

a second axis that is substantially perpendicular to the direction of application of the at least one coating applicator.

73. (New) A coating method for selectively applying a coating to surfaces of a stent, the method applying the coating based upon optical properties of the surfaces such that the coating is applied to surfaces of the stent and is not applied to surfaces of a balloon portion of a catheter on which the stent is mounted, the surfaces of the stent

being optically distinguishable from the surfaces of the balloon portion of the catheter, the coating method comprising:

positioning at least one coating applicator such that a direction of application is generally directed toward the stent and the balloon portion of the catheter on which the stent is mounted;

determining whether or not the coating applicator is aligned with only the surface of the stent; and

activating the at least one coating applicator when it is determined that the coating applicator is aligned with only the surface of the stent.

74. (New) The method of claim 73, further comprising:

de-activating the at least one coating applicator when it is determined that the coating applicator is not aligned with only the surface of the stent.

75. (New) The method of claim 73, wherein determining whether or not the coating applicator is aligned with only the surface of the stent comprises:

optically scanning the stent and the balloon portion of the catheter on which the stent is mounted; and

producing an output indicating at least one of: whether the at least one coating applicator is aligned with only the surface of the stent or whether the at least one coating applicator is aligned with only the surface of the balloon portion of the catheter.

76. (New) The method of claim 73, wherein generating relative movement comprises:

rotating the mounted stent about an axis at an angle relative to the direction of application of the at least one coating applicator.

77. (New) The method of claim 73, wherein generating relative movement comprises:

rotating the mounted stent assembly while at least one of: the at least one coating applicator and the at least one optical scanning device remains stationary.

78. (New) The method of claim 73, further comprising:
generating relative movement between the mounted stent, at least one optical scanning device and the at least one coating applicator.

79. (New) The method of claim 78, wherein generating relative movement comprises:
rotating the mounted stent about an axis substantially perpendicular to the direction of application of the at least one coating applicator.

80. (New) The method of claim 73, further comprising:
varying a spatial relationship between the at least one coating applicator and the mounted stent.

81. (New) The method of claim 80, wherein:
varying is along at least one of two axes:
a first axis that is substantially parallel to the direction of application of the at least one coating applicator, and
a second axis that is substantially perpendicular to the direction of application of the at least one coating applicator.